

CLAIMS:

Sub D37 1. ~~A peptide which binds antibodies that are found in elevated levels in body fluids of schizophrenic patients.~~

5 2. ~~A peptide according to claim 1, which binds antibodies that are capable of specific binding to a peptide having the amino acid sequence of Seq. I.D. No. 2.~~

Sub DA7 3. ~~A peptide according to claim 1 ~~and~~ 2, which binds antibodies that are capable of binding to a peptide selected from the group, consisting~~

10 of:

- i. SGETEDTFIADLVVGLCTGQIKTGAPCR (Seq. I.D. No. 1)
- ii. LVVGLCTGQIKTGAPCR (Seq. I.D. No. 2)
- iii. IADLVVGLCTGQIKTGAPCR (Seq. I.D. No. 3)
- iv. ADLVVGLCTGQIKTGAPCR (Seq. I.D. No. 4)
- 15 v. DLVVGLCTGQIKTGAPCR (Seq. I.D. No. 5)
- vi. LVVGLCTGQIKTGAPCR (Seq. I.D. No. 6)
- vii. LVVGLCTGQIKTGAPCR (Seq. I.D. No. 7)
- viii. LVVGLCTPQIKTGAPCR (Seq. I.D. No. 8)

20 4. ~~A peptide according to ^{claim 1} ~~any one of claims 1-3~~, capable of binding to antibodies which do not bind to peptides selected from the group consisting of:~~

- i. SGETEDTFIADLVVGLCTGQ (Seq. I.D. No. 9)
- ii. VVGLCTGQIKTGAPCR (Seq. I.D. No. 10)
- 25 iii. CTGQIKTGAPCR (Seq. I.D. No. 11)
- iv. LVVGLCTGQIKTGAPC (Seq. ID. No. 12)
- v. LVVGLCTGQIKTGAPC (Seq. ID No. 13)
- vi. LVVGLCTGQIKTGAPC (Seq. ID No. 14)

a 5. A peptide according to ^{claim 1} ~~any one of claims 1-4~~, comprising an amino acid sequence selected from the group, consisting of:

- i. SGETEDTFIADLVVGLCTGQIKTGAPCR (Seq. I.D. No. 1)
- ii. LVVGLCTCQIKTGAPAC (Seq. I.D. No. 2)
- 5 iii. IADLVVGLCTGQIKTGAPCR (Seq. I.D. No. 3)
- iv. ADLVVGLCTGQIKTGAPCR (Seq. I.D. No. 4)
- v. DLVVGLCTGQIKTGAPCR (Seq. I.D. No. 5)
- vi. LVVGLCTGQIKTGAPCR (Seq. I.D. No. 6)
- vii. LVVGLCTGQIKTGAPCR (Seq. I.D. No. 7)
- 10 viii. LVVGLCTPQIKTGAPCR (Seq. I.D. No. 8).

a 6. A peptide according to ^{claim 1} ~~any one of claims 1-4~~, selected from the group consisting of:

- i. SGETEDTFIADLVVGLCTGQIKTGAPCR (Seq. I.D. No. 1)
- 15 ii. LVVGLCTCQIKTGAPAC (Seq. I.D. No. 2)
- iii. IADLVVGLCTGQIKTGAPCR (Seq. I.D. No. 3)
- iv. ADLVVGLCTGQIKTGAPCR (Seq. I.D. No. 4)
- v. DLVVGLCTGQIKTGAPCR (Seq. I.D. No. 5)
- vi. LVVGLCTGQIKTGAPCR (Seq. I.D. No. 6)
- 20 vii. LVVGLCTGQIKTGAPCR (Seq. I.D. No. 7)
- viii. LVVGLCTPQIKTGAPCR (Seq. I.D. No. 8)

Sub Cl 7. A peptide which binds antibodies that are found in elevated levels in body fluids of schizophrenic patients, said peptide comprising at least one antigenic epitope, said epitope having a cyclic three dimensional structure consisting a hydrophobic core and a positively charged extension.

8. An assay for the diagnosis of schizophrenia in an individual, comprising the following steps:

- (a) obtaining a sample from said individual being a blood sample, a platelet-containing fraction thereof, or a fraction containing platelet-associated antibodies (PAA) shed from the platelets;
- (b) contacting said sample with a peptide capable of binding to antibodies that are found in elevated levels in body fluids of schizophrenic patients.
- (c) determining the level of binding of said peptide to said sample, a level higher than the binding level of said peptide to a sample from non-schizophrenic individuals indicating that said individual has a high likelihood of having schizophrenia.

9. An assay in accordance with claim 8, wherein the peptide of step (b) is a peptide having the amino acid sequence of Seq.ID.No.2

10. An assay in accordance with claim 8, wherein the peptide in step (b) comprises an a.a. sequence selected from the group consisting of:

- i. SGETEDTFIADLVVGLCTGQIKTGAPCR (Seq. I.D. No. 1)
- ii. LVVGLCTCQIKTGAPAC (Seq. I.D. No. 2)
- iii. IADLVVGLCTGQIKTGAPCR (Seq. I.D. No. 3)
- iv. ADLVVGLCTGQIKTGAPCR (Seq. I.D. No. 4)
- v. DLVVGLCTGQIKTGAPCR (Seq. I.D. No. 5)
- vi. LVVGLCTGQIKTGAPCR (Seq. I.D. No. 6)
- vii. LVVGLCTGQIKTGAPCR (Seq. I.D. No. 7)
- viii. LVVGLCTPQIKTGAPCR (Seq. I.D. No. 8).

11. An assay according to claim 8, wherein the peptide in step (b) is a peptide selected from the group consisting of:

- i. SGETEDTFIADLVVGLCTGQIKTGAPCR (Seq. I.D. No. 1)
- ii. LVVGLCTCQIKTGAPAC (Seq. I.D. No. 2)

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- iii. IADLVVGLCTGQIKTGAPCR (Seq. I.D. No. 3)
 - iv. ADLVVGLCTGQIKTGAPCR (Seq. I.D. No. 4)
 - v. DLVVGLCTGQIKTGAPCR (Seq. I.D. No. 5)
 - vi. LVVGLCTGQIKTGAPCR (Seq. I.D. No. 6)
 - 5 vii. LVVGLCTGQIKTGAPCR (Seq. I.D. No. 7)
 - viii. LVVGLCTPQIKTGAPCR (Seq. I.D. No. 8)

12. An assay in accordance with Claim 8, wherein the peptide in step (b) is a peptide in accordance with claim 7.

a 10 13. An assay in accordance with ^{Claim 8} any of Claims 8-12, wherein said sample obtained from the individual is a whole blood sample.

14. A kit for use in the diagnosis of schizophrenia comprising:

- Sub a2
- i. a support comprising one or more peptides in accordance with any one of claims 1-7 immobilized onto it;
 - 15 ii. an anti-human immunoglobulin antibody or fragment thereof conjugated to a detectable marker;
 - iii. reagents required for carrying out the assay, and;
 - iv. instructions for use.

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Abstract

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